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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,311

09/18/2006

Theodorus Gerhardus Potma

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EXAMINER

LIU, HENRY Y

ART UNIT

PAPER NUMBER

3657

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/593,311

Applicant(s)

POTMA, THEODORUS
GERHARDUS

Examiner

HENRY LIU

Art Unit

3657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-83 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 51, 52, 55, 56, 60, 62, 63, 64, 65, 70, 71, 72, 73, 74, 75, 76, 80, 81, 82, and 83 is/are rejected.
- 7) ☒ Claim(s) 53, 54, 57-59, 61, 66-69 and 77-79 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/18/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is the first action on the merits for application 10/593311. Claims 51-83 are currently pending in this application.

Status of Claims

Claims 51-83 are pending, of which **Claims 51, 72, and 75** are in independent form.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

Claim 71 is objected to because of the following informalities: "bevelled" should be changed to- beveled. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Regarding claim 58, the word "particularly" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 63, the phrase "for instance" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 75, the phrase "or the like" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim 76, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 51, 72, 73, and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by YANAY (5,830,093).

Regarding Claim 51, YANAY teaches "Drive (14) wherein mechanically intermittent or continuous power is transmitted from a driving shaft (52) to a driven shaft

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(53) by means of an endless belt (20) and at least one pulley (16) (18), wherein mechanic power is transmitted between belt (20) and pulley (16) (18) by means of friction, wherein on said pulley (16) (18) the incoming part and the outgoing part of the belt (20) are axially spaced apart wherein on the said pulley (16) (18) the belt (20) has a contact angle larger than 360 degrees of angle (Col 4 lines 34-44) (Fig. 7)."

Regarding Claim 72, YANAY teaches "Pulley (16) for a drive provided with a drive belt (20), which pulley (20) is disposed on a driving shaft (52) or a driven shaft (53), wherein the pulley (20) is provided with support surfaces for the drive belt (20), wherein the support surfaces are adjustable in radial distance to the centre line of the pulley (Col. 5 lines 36-53)."

Regarding Claim 73, YANAY teaches "wherein the support surfaces (60) are supported via first supports (22) on support surfaces of second supports (38) in the rest of the pulley (16), wherein the location of the effective support surfaces of the second supports (38) is radially adjustable (Col. 5 lines 36-53)."

Regarding Claim 74, YANAY teaches "provided with an adjustment part (26) circulating with the pulley (16), which adjustment part (26) can temporarily be given a speed deviating from the pulley speed in order to adjust the radial position of the support surfaces (60) (Col. 5 lines 36-53)."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 52, 55, 56, 60, 61, 63, 64, 65, 70, 80, 81, 82, and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over YANAY (5,830,093) in view of MITCHELL (3,603,296).

Regarding Claim 52, YANAY does not teach “provided with means due to which the frictional coefficient between belt and the said pulley is larger in tangential direction than in axial direction.”

MITCHELL teaches a belt (52) with teeth (54). The teeth allow for a higher friction coefficient in the tangential direction than in an axial direction.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the belt in YANAY with the teeth in MITCHELL to prevent the belt from slipping with the pulleys are rotating.

Regarding Claim 55, YANAY as modified teaches "wherein -considered in a plane of longitudinal-section of the pulley (YANAY (16) (18)) - the engagement surfaces of the pulley (YANAY (60)) are positioned according to a path that is at an angle, preferably a constant acute angle, to the shaft (YANAY Fig. 7, Fig. 9, and Fig. 10, Col. 7 line 50 – Col. 8 line 14)."

Regarding Claim 56, YANAY as modified teaches "wherein the said pulley (YANAY (16) (18)) is attached to at least one of the driving shaft (YANAY (52)) and the driven shaft (YANAY (53))."

Regarding Claim 60, YANAY as modified teaches "wherein the contact or engagement surfaces (YANAY (60)) are convex in a radial plane of cross-section of the pulley (YANAY Fig. 7, 8, and 9)." The rods (YANAY (22)) are convex in the direction of the travel of the belt.

Regarding Claim 61, YANAY as modified teaches "wherein guidance or control means (YANAY (62)) are present with which the belt (YANAY (20)) can be moved in axial direction over the pulley (YANAY (16) (18)) over a distance of at least the belt width per revolution of the pulley (YANAY Fig. 7, Fig. 9, and Fig. 10, Col. 7 line 50 – Col. 8 line 14)."

Regarding Claim 63, YANAY as modified teaches “wherein the belt (YANAY (20)) is moved axially by a fixedly positioned control member (YANAY (62)), extending from the radial outside between adjacent belt parts, for instance in the form of a control disk (YANAY (69) (70)) which does not move axially with respect to the pulley (YANAY (16) (18)) and of which the axis of rotation is situated beyond the axial guides (YANAY Fig. 7, Fig. 9, and Fig. 10, Col. 8 lines 14-24).”

Regarding Claim 64, YANAY as modified teaches “wherein the surface parts over which the belt contacts form a part of axial guides (YANAY (22)) distributed over the circumference of the pulley (YANAY (16) (18)) and which are radially movable with respect to the pulley (YANAY (16) (18)) (YANAY Fig. 7, 8, and 9, Col. 5 lines 36-53).”

Regarding Claim 65, YANAY as modified teaches “wherein the axial guides (YANAY (22)) move in radial slits or grooves (YANAY (32)) of one or two radial disks (YANAY (24a)) and also move in spiral shaped slits or grooves (YANAY (38)) of one or two spiral disks (YANAY (26)) (YANAY Fig. 6b and 8).”

Regarding Claim 70, YANAY as modified teaches “provided with means for altering the pre-tension of the belt (YANAY (59)) during adjusting the transmission ratio (YANAY Col. 6 line 59 – Col. 7 line 36).”

Regarding Claim 80, YANAY as modified teaches “comprising two radial (YANAY (24a) (24b)) disks and two spiral disks (YANAY (26), Fig. 8), wherein both the radial (YANAY (24a) (24b)) and the spiral disks (YANAY (26), Fig. 8) are situated on both sides of the axial guides (YANAY (22)), wherein the two radial disks (YANAY (24a) (24b)) are connected to each other or mechanically coupled such that they co-rotate with each other and wherein the axial guides (YANAY (22)) are moved radially due to rotation of the radial disks (YANAY (24a) (24b)) and the spiral-disks (YANAY (26), Fig. 8) with respect to each other (Col. 5 lines 36-53).”

Regarding Claim 81, YANAY as modified teaches “wherein the radial disks (YANAY (24a) (24b)) or the spiral disks (YANAY (26)) are connected to the driven (YANAY (53)) or the driving shaft (YANAY (52)) of the pulley (YANAY (16)), wherein the axial guides (YANAY (22)) are moved by decelerating the spiral disks (YANAY (26), Fig. 8) or the radial disks (YANAY (24a) (24b)) while the shaft (YANAY (52) (53)) of the pulley (YANAY (16)) is rotating (Col. 6 line 27- Col. 7 line 36).” Exerting a force which displaces the shaft (52) (53) either inward or outward decelerates the adjustment discs relative to the positioning discs.

Regarding Claim 82, YANAY as modified teaches “wherein the radial disks (YANAY (24a) (24b)) and the spiral disks (YANAY (26)) rotate such with respect to each other under spring force (YANAY (59)) that the axial guides (YANAY (22)) move in the direction of the largest diameter or the smallest diameter (Col. 7 lines 26-36).”

Regarding Claim 83, YANAY as modified teaches “wherein the spiral disks (YANAY (26)) and the radial disks (YANAY (24a) (24b)) can be mechanically coupled to each other with a controllable coupling (YANAY (57)) (Col. 7 lines 26-36).”

Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over YANAY (5,830,093) in view of NIEZGODA (6,076,823).

Regarding Claim 71, YANAY as modified does not teach “wherein the belt is provided with bevelled edges situated at the radial outside of the belt.”

NIEZGODA teaches a belt with beveled edges on the outside surface (Fig. 2, Fig. 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the belt in YANAY with the belt in NIEZGODA to create a drive with a more lightweight belt.

Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over DANHAUER (2002/0098935) in view of NIEZGODA (6,076,823).

Regarding Claim 75, DANHAUER teaches “Endless belt (10) for transmitting power from a driving shaft to a driven shaft, wherein the belt has a tensile reinforcement, such as tension cords (22) or the like, wherein the portion of the belt (10) that, considered in cross-section, is situated at the radial inside of the belt (10) has a radial size that at the most equals the radial size of the portion of the belt (10) that is situated at the other side of the tensile reinforcement (22) (Fig. 1).”

DANHAUER does not teach “wherein the belt is provided with bevelled edges situated at the radial outside of the belt.”

NIEZGODA teaches a belt with beveled edges (Fig. 2 and 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the belt in DANHAUER with the beveled edge shape in NIEZGODA to create a more lightweight belt.

Claim 76 is rejected under 35 U.S.C. 103(a) as being unpatentable over COWAN (5,121,936) in view of YANAY (5,830,093).

Regarding Claim 76, COWAN teaches a bicycle using a continuous automatic transmission (Abstract).

YANAY teaches a drive according to claim 51 as discussed above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the bicycle in COWAN with the drive in YANAY to create

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a bicycle with a belt based continuous variable automatic transmission for reduced noise.

Allowable Subject Matter

Claims 53, 54, 57, 58, 59, 61, 66, 67, 68, 69, 77, 78, and 79 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY LIU whose telephone number is (571) 270-7018. The examiner can normally be reached on Mon-Thurs 7:30am - 5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBERT SICONOLFI can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HENRY LIU/
Examiner, Art Unit 3657

/Robert A. Siconolfi/
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